AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Withdrawn)

Claims 2-8 (Canceled).

9. (Previously presented) A method of detecting the presence of 2-chlorophenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 2-chlorophenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2-chlorophenol in the test sample.

10. (Previously presented) The method according to claim 9, wherein the DmpR mutant is selected from the group consisting of DmpR-B21, DmpR-B23, and DmpR-D9.

11. (Previously presented) A method of detecting the presence of 2,4-dichlorophenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a

mutation in the sensor domain conferring an enhanced transcriptional activation response to 2,4-dichlorophenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2,4-dichlorophenol in the test sample.

12. (Previously presented) The method according to claim 11, wherein the DmpR mutant is selected from the group consisting of DmpR-B21, DmpR-B17#2, DmpR-B9 and DmpR-D12.

13. (Previously presented) A method of detecting the presence of 2,4-dimethylphenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 2,4- dimethylphenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2,4-dimethylphenol in the test sample.

14. (Previously presented) The method according to claim 13, wherein the DmpR mutant is DmpR-B31.

15. (Previously presented) A method of detecting the presence of 2-nitrophenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the senso r domain conferring an enhanced transcriptional activation response to 2-nitrophenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2-nitrophenol in the test sample.

16. (Previously presented) The method according to claim 15, wherein the DmpR mutant is DmpR-D9.

17. (Previously presented) A method of detecting the presence of 4-nitrophenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 4-nitrophenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 4-nitrophenol in the test sample.

18. (Previously presented) The method according to claim 17, wherein the DmpR mutant is DmpR-B31.

19. (Previously presented) A method of detecting the presence of phenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to phenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of phenol in the test sample.

20. (Previously presented) The method according to claim 19, wherein the DmpR mutant is DmpR-B9.

21. (Previously presented) A method of detecting the presence of one or more phenolic compounds selected from the group consisting of phenol, 2-chlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2-nitrophenol and 4-nitrophenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to the phenolic compound(s) relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of one or more phenolic compounds in the test sample.

22. (Previously presented) An isolated polynucleotide consisting of a nucleotide sequence selected from the group consisting of SEQ ID NOS. 1 - 7, and complementary sequences thereof.

23. (Previously presented) A polynucleotide vector comprising the polynucleotide according to claim 22.

24. (Previously presented) A host cell containing the vector of claim 23.

25. (Previously presented) A method of detecting the presence of a phenolic compound selected from the group consisting of phenol, 2-chlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2-nitrophenol, 4-nitrophenol and 4-chloro-3-methylphenol in a test sample, comprising

(a) culturing a bacteria in the presence of the test sample, wherein the bacteria is selected from the group consisting of *Pseudomonas* and *Escherichia coli* and contains a reporter gene under the control of a promoter inducible by a mutant DmpR protein having at least a 4-fold enhanced transcriptional activation response to said phenolic compound relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of the phenolic compound in the test sample.

Claims 26-29 (Withdrawn).

Respectfully submitted,

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Signature of Attorney

Reg. No. 35,355
Phone (505) 667-0304

Kenneth K. Sharples
Los Alamos National Laboratory
LC/IP, MS A187
Los Alamos, New Mexico 87545